Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	30307	bacillus thuringiensis or bt	US-PGPUB; USPAT	ADJ	ON	2005/09/26 11:54
L2	132	1 same toxin same domain	US-PGPUB; USPAT	ADJ	ON	2005/09/26 11:55
L3	41	2 same (hybrid or chimer$ or combin$)	US-PGPUB; USPAT	ADJ	ON	2005/09/26 11:56
L4	0	3 same CryIIA	US-PGPUB; USPAT	ADJ	ON	2005/09/26 11:56
L5	0	3 same CryIBa	US-PGPUB; USPAT	ADJ	ON	2005/09/26 12:23
L6	0	CryIBa	US-PGPUB; USPAT	ADJ	ON	2005/09/26 12:23
L7	158	CryIB	US-PGPUB; USPAT	ADJ	ON	2005/09/26 12:23
L8	29	1 with 7	US-PGPUB; USPAT	ADJ	ON	2005/09/26 12:23
L9	0	8 with hybrid	US-PGPUB; USPAT	ADJ	ON	2005/09/26 12:23

Office Action Summary	Application No.	Applicant(s)	
	09/782,158	ORIHASHI ET AL.	
	Examiner	Art Unit	
	Jason M. Perilla	2638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11,12,19,22,24 and 25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11,12,19,22,24 and 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 February 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 11, 12, 19, 22, 24, 25 are pending in the instant application.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on August 22, 2005 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Response to Arguments/Amendments

3. Regarding the Applicant's arguments filed July 20, 2005, against the prior art rejections of claims 11, 12, 19 and 22 under 35 U.S.C. §103(a) as being unpatentable over Komatsu (US 5818882) in view of Walley et al (US 674480), the arguments are not persuasive.

The Applicant notes that the teachings of Walley et al are represented by controlling a spreading code (PN) length at the transmitter and not the receiver. However, as indicated in the final office action dated April 21, 2005, the teachings of Walley et al with respect to the transmitter have an obvious corollary with respect to a receiver. That is, it is obvious according to the teachings of Walley et al to implement a correlator that has an adjustable calculation length which depends upon the various factors of interference level and signal strength because such factors determine the length of correlation necessary for proper reception.

The Applicant additionally suggests that the prior art reference Walley et al does not specifically teach controlling a calculation length according to a signal to noise ratio or Eb/No. However, the Examiner finds that each of independent claims 11 and 19

provide for "a reception situation estimator that estimates *at least one of* a signal to noise ratio, a reception power, and a ratio of energy per bit to spectral noise density (Eb/No)". That is, the claims are not limited to determining a correlation length upon only one specific factor, but rather upon any of a group of factors.

4. New art rejections are set forth in view of the newly cited reference Goto (US Pub. No. 2002/0037030).

Claim Objections

5. Claims 24 and 25 are objected to because of the following informalities:

Regarding claims 24 and 25, the acronym "Eb/No" is not defined in the claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 11, 19, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu (US 5818882 – previously cited) in view of Goto (US Pub. No. 2002/0037030).

Regarding claim 11, Komatsu discloses a radio reception apparatus (fig. 3; col. 2, lines 59-62) comprising: a correlation calculator (fig. 3, refs. 4a-n; col. 5, lines 55-67; col. 7, lines 9-18) for performing a correlation calculation having a calculation length on a reception signal using a known signal (col. 5, line 61 -"spread code"); a delay detector

(figs. 3 and 4, refs. 5a-n; col. 6, lines 3-15) for performing delay detection using the signal after said correlation calculation (col. 7, lines 18-26); and a detector for detecting synchronization timing from the delay detection output (fig. 3, ref. 7; fig. 4, refs. 20-22; col. 6, lines 32-35). Komatsu does not explicitly disclose a reception situation estimator or a calculation length controller that controls the calculation length according to a signal to noise ratio, a reception power or an Eb/No. However Goto teaches a radio reception apparatus (fig. 14, ref. 65; para. 0004 and 0005) using a reception situation estimator (fig. 10, refs. 17a, 17b) and calculation length controller (fig. 10, refs. 18a and 18b) that controls the calculation length according to a reception power via a threshold (fig. 10, ref. "Th"). Goto teaches that a correlator can be divided into two portions (fig. 10, refs. 16a, 14a), and, depending on the reception power or peak output from the first portion (fig. 10, output from summer 22a) compared by the reception situation estimator (fig. 10, ref. 17a), the calculation length of the full correlation may be controlled by the calculation length controller (fig. 10, ref. 18a) to save power used by the second portion (para. 0146, 0147, and 0157). That is, the correlator of Goto is divided because, advantageously, power can be saved if the first portion of the correlation results in low reception power (para. 0156) by effectively turning off the second portion. Thereby, the calculation length is controlled. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize a correlation calculator as taught by Goto having a first portion, a second portion, a reception situation estimator, and a calculation length controller in the radio reception apparatus

of Komatsu because it could advantageously be utilized to save power when the reception power does not meet the specified threshold.

Regarding claim 19, the claim limitations are disclosed by Komatsu in view of Goto as applied to claim 11 above.

Regarding claims 24 and 25, Komatsu in view of Goto disclose the limitations of the claim as applied to claim 11 above. Komatsu in view of Goto do not explicitly disclose that the reception situation estimator estimates an Eb/No based upon the reception signal. Rather, Komatsu in view of Goto disclose that the reception signal estimator estimates the reception peak power. However, Goto does additionally teach that the reception peak power is related to the energy of a received signal per one bit of information Eb/No (para. 0022). One skilled in the art is aware of the relationships between the reception peak power and the Eb/No of a received signal. Therefore, it is obvious to one having ordinary skill in the art at the time which the invention was made that the reception peak power estimated by the reception signal estimator could alternatively be estimated in units of Eb/No of a received signal because they are closely related or nearly equivalent information.

8. Claims 11, 12, 19, 22, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu in view of Walley et al (US 674480; hereafter "Walley" – previously cited).

Regarding claim 11, Komatsu discloses a radio reception apparatus (fig. 3; col. 2, lines 59-62) comprising: a correlation calculator (fig. 3, refs. 4a-n; col. 5, lines 55-67; col. 7, lines 9-18) for performing a correlation calculation having a calculation length on

a reception signal using a known signal (col. 5, line 61 -"spread code"); a delay detector (figs. 3 and 4, refs. 5a-n; col. 6, lines 3-15) for performing delay detection using the signal after said correlation calculation (col. 7, lines 18-26); and a detector for detecting synchronization timing from the delay detection output (fig. 3, ref. 7; fig. 4, refs. 20-22; col. 6, lines 32-35). Komatsu does not explicitly disclose a reception situation estimator or a calculation length controller that controls the calculation length according to a signal to noise ratio, a reception power or an Eb/No. However, Walley teaches a technique to adjust a transmission and reception rate of a spread spectrum system according to a reception situation or signal to noise ratio (abstract; col. 1, lines 26-41; col. 3, lines 15-20; col. 4, lines 17-25). Walley teaches by figure 8 a transmit controller (805) which utilizes both a variable transmit duty cycle (bitrate) controller (819) and a variable length PN code generator (807) along with input variables of the data receive rate (811), the interference or signal to noise ratio (813), and the signal strength or reception power (815) to adaptively determine an appropriate PN code length and data bitrate for a given reception situation according to the input variables (col. 8, lines 9-15; col. 8, line 55-col. 9, line 16; col. 9, lines 48-56). Walley teaches the input variables (fig. 8, refs. 811, 813, and 815) are applied to the transmit controller (805) and, therefore, teaches a reception situation estimator which must exist to produce the input variable signals. Further, the transmit controller (805) controls the length of the calculation length by controlling the length of the spreading code according to the input variables from the reception situation estimator (not shown). Although the teachings of Walley are mostly in the context of the length of the spreading code for transmission, Walley does explain that

the variability of the data bitrate and spreading code according to the reception situation does apply to transmit and receive functions as understood by one having skill in the art (col. 9, lines 1-3). Further, one skilled in the art finds that the teachings of Walley with respect to the transmitter have an obvious corollary with respect to a receiver. That is, it is obvious according to the teachings of Walley to implement a correlator that has an adjustable calculation length which depends upon the various factors of interference level and signal strength because such factors determine the length of correlation necessary for proper reception. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize a reception situation estimator and a calculation length controller as taught by Walley in the apparatus of Komatsu because the data bitrate and spreading rate could be appropriately adjusted according to the signal to noise ratio or reception power, for instance.

Regarding claim 12, Komatsu in view of Walley disclose the limitations of claim 11 as applied above. Further, Walley discloses that it is advantageous to increase the spreading rate and, hence, the calculation length when the signal to noise ratio is bad (abstract, lines 23-28; col. 3, lines 15-20; col. 4, lines 23-25). That is, to increase interference tolerance and increase the range of the transmission, the spreading rate and calculation length should be increased. Likewise, Walley discloses that the calculation length (spreading code) may be decreased when the reception situation is favorable (col. 4, lines 17-22) to increase the bit rate.

Regarding claims 19 and 22, the claim limitations are disclosed by Komatsu in view of Walley as applied to claims 11 and 12, above.

Regarding claims 24 and 25, Komatsu in view of Walley disclose the limitations of the claim as applied to claim 11 above. Komatsu in view of Walley do not explicitly disclose that the reception situation estimator estimates an Eb/No based upon the reception signal. Rather, Komatsu in view of Walley disclose that the reception signal estimator estimates using such information as data receive rate, signal interference level, and signal strength (Walley; col. 9, lines 45-55). One skilled in the art is aware of the relationships between the signal interference level and the signal to noise ratio Eb/No of a received signal. Therefore, it is obvious to one having ordinary skill in the art at the time which the invention was made that the reception peak power estimated by the reception signal estimator could alternatively be estimated in units of signal to noise ratio Eb/No of a received signal because they are closely related or equivalent information.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Perilla whose telephone number is (571) 272-3055. The examiner can normally be reached on M-F 8-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason M. Perilla
October 17, 2005

jmp

KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER